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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/518,380

03/29/2005

Anton Stapel

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23338 7590 10/29/2007
DENNISON, SCHULTZ & MACDONALD
1727 KING STREET
SUITE 105
ALEXANDRIA, VA 22314

EXAMINER

HESS, MICHAEL THOMAS

ART UNIT

PAPER NUMBER

3729

MAIL DATE

DELIVERY MODE

10/29/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/518,380

Applicant(s)

STAPEL, ANTON

Examiner

Michael T. Hess

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-24 and 26-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-24 and 26-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 2, 2007 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 15-24 and 26-30 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,317,277 to Bennett et al. (Bennett) in view of U.S. Published Application No. 2003/0098332 to Loprire (Loprire).

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In Reference to Claim 15

Bennett teaches:

A method for electrically conductive connection of at least two wires provided with an insulating lacquer, comprising the steps of:

At least partially enclosing the wires, in a region in which the wires (Ref. #s 10, 12, 14; Col. 1, Lines 29-33 and Col. 2, Lines 40-45, because Bennett is an improvement of the stated prior art of connecting enamel insulated wires, the insulation conductive members of Bennett are enamel wires, which a person having ordinary skill in the art at the time the invention was made would have recognized lacquer is one of a limited number of acceptable enamels) are to be connected (see Figs 1 and 4), in an electrically conductive material (Ref. # 18).

However, Bennett fails to teach:

Subjecting the region to ultrasound, whereby the insulating lacquer of the wires is broken away and a fixed connection is caused between the electrically conductive material and the wires, simultaneously with an electrically conductive connection between the wires.

Loprire teaches:

Subjecting the region to ultrasound ($[111]$ [0003] and [0010]), whereby the insulating lacquer of the wires is broken away and a fixed connection is caused between the electrically conductive material and the wires, simultaneously with an electrically conductive connection between the wires (See Moll et al, cited as relevant prior art, for

further indication that one having ordinary skill in the art at the time the invention was made would have known the effects of how-ultrasonic welding works).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have substituted the ultrasonic welding of the Loprire in the method for electrically conductive connection of at least two wires of Bennett et al. in order to achieve an atomic and molecular bonding of the metals together with a weld-like efficacy as explicitly taught by Loprire.

In Reference to Claim 16

A method according to claim 15, wherein a plurality of lacquered wires and at least one uninsulated conductor (see Bennett, Col. 5, Lines 62-64) are partially enclosed by the material (Bennett, Figs. 1-3).

In Reference to Claim 17

A method according to claim 15, wherein the electrically conductive material is in the form of a sleeve or a cup (Bennett, Fig. 1, Ref. # 18; Col. 2, Lines 48-49, wherein the penetrator is in the form of a brass screen).

In Reference to Claim 18

A method according to claim 15, wherein the electrically conductive material is an inherently rigid material (Bennett, Col. 3, Lines 54-65, wherein the penetrator is metallic material).

In Reference to Claim 19

A method according to claim 15, wherein the electrically conductive material is a flexible material (Bennett, Fig. 1, Ref. # 18; Col. 2, Lines 48-49).

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In Reference to Claim 20

A method according to claim 19, wherein the flexible material is a mesh (Bennett, Fig. 1, Ref. # 18; Col. 2, Lines 48-49, wherein the penetrator is in the form of a brass screen).

In Reference to Claim 21

A method according to claim 15, wherein the material is at least partially connected in form-fitting manner with at least two lacquered wires (Bennett, Fig. 1; Col. 2, Lines 54-61, wherein the metallic penetrator is interwoven).

In Reference to Claim 22

A method according to claim 15, wherein the material is at least partially connected in force-fitting manner with at least two lacquered wires, and the joined wires and conductor are connected to a conductive carrier (Bennett, Figs. 2 and 3, Ref. # 16) by ultrasound welding (see Obviousness rejection of Claim 1 above).

In Reference to Claim 23

A method according to claim 156, wherein the wires comprise a conductive core of aluminum or copper (Bennett, Col. 2, Lines 41-44, wherein coated conductive members are made of aluminum or copper).

In Reference to Claim 24

A method according to claim 15, wherein the electrically conductive comprises copper (Bennett, Col. 2, Lines 49-51, wherein metallic penetrator is made of copper and zinc).

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In Reference to Claim 26

A method according to claim 15, wherein the electrically conductive material is a sheet metal strip (Bennett, Fig. 5, Ref. # 18a, Col. 4, Lines 10-11, wherein the metallic penetrator is in the form of a strip of copper alloy).

In Reference to Claim 27

A method according to claim 26, wherein the sheet metal strip is crimped around the wires (Bennett, Col. 4, Lines 10-15, wherein the penetrator engages the conductive members).

In Reference to Claim 28

A method according to claim 15, wherein the electrically conductive material comprises a single ply or multiple ply strip material wound around the lacquered wires (Bennett, Fig. 5, Ref. # 18a, Col. 4, Lines 10-11).

In Reference to Claim 29

A method according to claim 15, wherein the electrically conductive material comprises a preformed open receptacle (Bennett, Fig. 5, Ref. # 18a).

In Reference to Claim 30

A method according to claim 29 wherein the open receptacle has a U-, circular or trapezoid-shaped cross-section (Bennett, Fig. 5, Ref. # 18a).

4. Claims 15-24 and 26-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,099,366 to Shinchi (Shinchi) in view of U.S. Patent No. 4,712,723 to Moll et al. (Moll).

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In Reference to Claims 15-19, 21, 22, 26-30

Shinchi teaches:

a method for electrically conductive connection of at least two wires (Ref. # 19) provided with a cover (Ref. # 27), comprising the steps of:

at least partially enclosing (Ref. # 30, see Fig. 6) the wires (Ref. # 19), in a region in which the wires (Ref. # 19) are to be conductively connected and in contact with each other (Fig. 6, Col. 5, Lines 58-62), with an electrically conductive material (Col. 5, Lines 58-62, if lower plate 30 is electrically connected to the wires 19, it is necessarily made with an electrically conductive material);

arranging the at least partially enclosed wires (Fig. 6, Ref. # 19) between an anvil (inherent in an ultrasound process because there is pressure on the wires and the conductors, so there must be an anvil to absorb the force) and a sonotrode (Col. 5, Lines 48-55, discussing bringing a horn into contact with the cover 12 in order to cause ultrasonic welding) of an ultrasonic welding device;

subjecting the region to ultrasound (Col. 5, Lines 48-55), causing relative movement between the wires (Ref. # 19) and between the wires (Ref. # 19) and the electrically conductive material (Ref. # 30 lower plate is considered a conductive carrier and a U-shaped preformed receptacle wound around wires 19, in the shape of a sleeve, see Fig. 6 and is rigid as it holds the cores 26, Col. 5, Lines 58-62; Col. 5, Lines 48-50, vibration) and an uninsulated conductor (Ref. # 31, see Fig. 6, appears to be in sheet form, is heated and receives pressure necessarily resulting deforming or crimping, Col. 5, Lines 50-52) and causing deformation of the electrically conductive material (Ref. #

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30, Col. 5, Lines 50-52, pressure and heat is applied, which would result in the material of the lower plate 30 becoming flexible and cause some sort of deformation and formfitting of the lower plate 30), the relative movement causing the cover (Ref. # 27) of the wires (Ref. # 19) to be broken away in the contact regions (Col. 5, Line 52), and a fixed connection is formed between the electrically conductive material (Ref. # 30) and the contacting wires (Ref. # 26, wires 19 without the cover 27), simultaneously with an electrically conductive connection between the wires (Col. 5, Lines 55-62);

However, Shinchi fails to teach:

a method for electrically conductive connection of wires having an insulating lacquer.

Moll teaches:

a method for electrically conductive connection of wires having an insulating lacquer (Col. 1, Lines 33-37, discussing ultrasonic welding in which lacquer insulation is broken away, welding is simultaneously accomplished).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the lacquered wires of Moll in the method for electrically conductive connection of wires of Shinchi in order to ultrasonically weld lacquered wires instead of manually bonding them or soldering by automation, which is known to creates a stronger weld and save time.

In Reference to Claim 20

Shinchi in view of Moll teaches:

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a method according to claim 19 (see 35 U.S.C. § 103(a) rejection of Claim 19 above).

However, Shinchichi in view of Moll fails to teach:

wherein the flexible material is a mesh.

It would have been obvious to one having ordinary skill in the art at the time the invention was made, as a matter of design choice, to have used mesh as the conductive material in the method of Shinchichi in view of Moll because Applicant has not disclosed that using mesh solves a specific problem and it appears the method of Shinchichi in view of Moll would work equally well with a mesh conductive material.

In Reference to Claim 23 and 24

Shinchichi in view of Moll teaches:

a method according to claim 15 (see 35 U.S.C. § 103(a) rejection of Claim 15 above), wherein the wires comprise a conductive core (Ref. # 26).

However, Shinchichi in view of Moll fails to teach:

wherein the a conductive core is made of aluminum or copper and the electrically conductive material is copper.

It would have been obvious to one having ordinary skill in the art at the time the invention was made, as a matter of design choice, to have used a copper or aluminum core and copper as the electrically conductive material in the method of Shinchichi in view of Moll because Applicant has not disclosed that using aluminum or copper for the core and copper for the electrically conductive material solves any stated problem or is for any particular purpose and it appears that the method of Moll in view of Shinchichi would

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perform equally well with a copper or aluminum core and a copper electrically conductive material.

Response to Arguments

5. Applicant's arguments filed August 28, 2007 have been fully considered but they are not persuasive.

Applicant's Arguments Regarding Bennet et al.

Applicant argues that Bennet et al. does not show conductive members in direct contact with each other because they are wrapped in a metallic penetrator 18.

However, Applicant never requires the conductive members to be in direct contact with each other. At most Applicant requires the wires or conductive members to be in some sort of contact, not necessarily direct contact, by the end of the process, possibly after welding because "to be" on line 5 of Claim 15 can be seen as modifying "in contact with each other," allowing the contact to occur at anytime in the method as long as it eventually occurs.

Applicant's Arguments Regarding Loprire

Applicant argues that it is not know whether successful welding will occur if the resistance welding machine is replaced by the ultrasonic welder of Loprire. However, Examiner cites to Moll et al. to back up his claim that it is well known in the art to use ultrasonic welding when welding lacquered wires to other conductive material.

Therefore, Applicant's arguments regarding Bennet et al. and Loprire are unpersuasive and Examiner has maintained the Rejection of Claims 15-24 and 26-30 in

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Final Action dated July 5, 2007, as Claim 25 was canceled, while back up that rejection with a new rejection with Shinchi in view of Moll et al. of Claims 15-24 and 26-30.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael T. Hess whose telephone number is 571-270-1994. The examiner can normally be reached on 6:30 AM - 5:00 PM, Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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MTH 10-23-07



PETER VO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700